

TSG/ESD/TEB-035/70
26 October 1970

MEMORANDUM FOR THE RECORD

SUBJECT: Twin Stage Comparator (TSC) Resolution

1. Introduction

During the post-modification evaluation of the TSC a check was made of the resolution as low readings were obtained even before the adjustment of the focus problem. (See Memorandum Test Report, TSG/ESD/TEB, 28 Sept 70). In response to the reported resolution loss, especially on the right-hand optical path, [] representing the [] attempted to locate the source of the apparent resolution loss. 25X1

2. Tests Performed

[] used a glass resolution target of relatively high contrast, (3 bar configuration) which was specially made by the [] Five observers read the target and concluded that the [] target was significantly better than the 1951 USAF target because higher readings were obtained consistently on both optical paths. 25X1

3. Result

[] *Film frags made by for ESD. - old & defective* 25X1

After much discussion the following conclusions were agreed upon:

- a. The right optical path has slightly less resolving capability than the left path.
- b. Resolution in both paths is in the order of 800+ lines/mm, for 200x system magnification.
- c. No adjustment the optical components would improve the resolution in either path.
- d. Sufficient resolution is probably available with the existing 800+ lines/mm.
- e. The 1951 USAF 240x reduction target ^(film) has probably degraded such that with the slight problem in the right optical path, low resolution readings were obtained.

4. Recommendations and Conclusions

In order to eliminate possible discrepancies in the future, the resolution readings should be made using the same target throughout all testing phases.

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NGA Review

Complete

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Possible consideration should also be given to limit contract specifications to lines/mm values which can be read using the specified target including a tolerance (i.e., Specification - 800 (+50) 1/mm corresponds to target group 2 element 3 (+1 element) = 800 (+50) 1/mm). These changes would allow easier judgment as to whether the contract obligation was met or not.

25X1

It appears that the TSC resolution is borderline according to the exact resolution specification, however, the present level of 800+ lines/mm will probably be sufficient.

25X1

Test Engineer
TEB/ESD

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